CONTENTS

Proceedings of the Fortieth Anniversary of the Institute of Environmental Medicine at the New York University Medical Center

S. Belman and T. Kneip. Preface 3

V. T. Devita, Jr. Overview 5

A. C. Upton. Introduction: Scientific advances in environmental medicine 7

Markers of Exposure to Carcinogens

G. N. Wogan. Markers of exposure to carcinogens 9

J. J. Solomon and A. Segal. DNA adducts of propylene oxide and acrylonitrile epoxide: Hydrolytic deamination of 3-alkyl-dCyd to 3-alkyl-dUrd 19

Oncogenes

B. Bailleul, K. Brown, M. Ramsden, R. J. Akhurst, F. Fee, and A. Balmain. Chemical induction of oncogene mutations and growth factor activity in mouse skin carcinogenesis 23

S. J. Garte and A. E. Hochwalt. Commentary. Oncogene activation in experimental carcinogenesis: The role of carcinogen and tissue specificity 29

E. W. Newcomb, L. E. Diamond, S. R. Sloan, M. Corominas, I. Guerrerro, and A. Pellicer. Radiation and chemical activation of *ras* oncogenes in different mouse strains 33

Mechanisms of Tumor Promotion: Role of Oxygen Radicals

P. A. Cerutti. Response modification in carcinogenesis 39

K. Frenkel. Oxidation of DNA bases by tumor promoter-activated processes 45

B. D. Goldstein, B. Czerniecki, and G. Witz. The role of free radicals in tumor promotion 55

W. Troll. Protease inhibitors interfere with the necessary factors of carcinogenesis 59

In Vitro Levels of Carcinogenesis

J. B. Little. *In vitro* models of carcinogenesis: Expression of recessive genes by chromosomal mutations 63

F. J. Burns, R. E. Albert, and S. J. Garte. Multiple stages in radiation carcinogenesis of rat skin 67

M. Costa. Perspectives on the mechanism of nickel carcinogenesis gained from models of *in vitro* carcinogenesis 73

T. G. Rossman, C. B. Klein, and C. A. Snyder. Mutagenic metabolites of benzene detected in the microscreen assay 77

Carcinogenic Effects of Asbestos and Mineral Fibers

J. C. Barrett, P. W. Lamb, and R. W. Wiseman. Multiple mechanisms for the carcinogenic effects of asbestos and other mineral fibers 81

B. T. Mossman and J. P. Marsh. Evidence supporting a role for active oxygen species in asbestos-induced toxicity and lung disease 91

Carcinogenicity Risk Assessment

A. S. Whittemore. Cancer risk assessment and prevention: Where do we stand? 95

R. E. Albert. Commentary. Carcinogen risk assessment 103

Health Effects of Air Pollution

B. Altshuler. Commentary. Quantitative models for lung cancer induced by cigarette smoke 107

M. O. Amdur. Health effects of air pollutants: Sulfuric acid, the old and the new 109

M. Lippmann. Effective strategies for population studies of acute air pollution health effects 115

E. D. Palmes. Commentary. Discussion of "Health Effects of Air Pollution" 121

R. B. Schlesinger. Comparative toxicity of ambient air pollutants: Some aspects related to lung defense 123

J. L. Whittenberger. Commentary. Health effects of air pollution: Some historical notes 129

Radiation Epidemiology

B. MacMahon. Some recent issues in low-exposure radiation epidemiology 131

N. H. Harley. Commentary. Shortcomings in risk projection 137

N. Dubin, M. Moseson, and B. S. Pasternack. Sun exposure and malignant melanoma among susceptible individuals 139

R. E. Shore. Radiation epidemiology: Old and new challenges 153

Immunotoxicology and Host Defenses

M. L. Luster, M. F. Ackermann, D. R. Germolec, and G. J. Rosenthal. Perturbations of the immune system by xenobiotics 157

H. N. Eisen. Commentary. Looking back 163

C. A. Snyder. The neuroendocrine system, an opportunity for immunotoxicologists 165

Contributed Articles

D. A. Freedman and W. C. Navidi. Multistage models for carcinogenesis 169

A. Penn. Molecular alterations critical to the development of arteriosclerotic plaques: A role for environmental agents 189

R. E. Meyer, T. E. Aldrich, and C. E. Easterly. Effects of noise and electromagnetic fields on reproductive outcomes 193

C. L. Mitchell, D. I. McRee, N. J. Peterson, H. A. Tilson, M. G. Shandala, M. I. Rudnev, V. V. Varetskii, and M. I. Navakatikyan. Results of a United States and Soviet Union joint project on nervous system effects of microwave radiation 201

L. S. Gold, L. Bernstein, R. Magaw, and T. H. Slone. Interspecies extrapolation in carcinogenesis: Prediction between rats and mice 211

D. A. Edelman and V. L. Roggli. The accumulation of nickel in human lungs 221

V. A. McFarland and J. U. Clarke. Environmental occurrence, abundance, and potential toxicity of polychlorinated biphenyl congeners: Considerations for a congener-specific analysis 225

Letters to the Editor

J. Bjorksten. 241

J. C. Tohá and I. Tomicić 243

Announcement 245

Published Volumes of EHP 247

Instructions to Authors 249